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Separative conjunction: Evidence from Japanese non-exhaustive connectives

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ABSTRACT

This paper examines the semantic behavior of Japanese non-exhaustive connectives *ya*, *-tari*, and *toka* in contexts that allow exhaustive interpretations. Traditionally described as markers of non-exhaustivity and open-ended listing, a qualitative analysis of natural occurrences drawn from a web corpus shows that these connectives can encode a specific semantic relation referred to as *separative conjunction*. According to this reading, all coordinated elements are asserted to be realized independently, across distinct temporal or contextual instances. Furthermore, the analysis demonstrates that this reading can give rise to iterative and distributive interpretations, especially when the utterance involves realis temporal anchoring. Contrary to previous accounts that associate these further readings with intrinsic aspectual values (particularly in the case of the converb *-tari*), this paper argues that such aspectual inferences are derived from the semantic properties of the separative conjunction reading, rather than from the connectives themselves. Overall, this study aims to contribute to the ongoing debate on the semantics of coordination and to explore the extent to which linguistic connectives and their functions can be understood through the lens of logical operators.

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1. Introduction: aims and methods

The aim of this paper is to examine the semantic relation encoded by three Japanese non-exhaustive connectives (*ya*, *-tari*, *toka*) when used in contexts that support potentially exhaustive interpretations. The term *non-exhaustive connective* is used here following the typological analysis proposed by Barotto and Mauri (2022), to denote a specific class of connectives that conventionally introduce open-ended lists of items (e.g., X, Y, Z ...). Although these connectives are primarily associated with non-exhaustivity (Chino 2001; Barotto 2021), previous studies (e.g., Ichikawa 1991; Alpatov 1997; Hayashishita and Bekki 2012) have demonstrated that they can also be used in contexts where the coordinated elements form a potentially exhaustive set, thereby excluding other items that are not explicitly mentioned (i.e., X, Y, and Z).

Several scholars have attempted to account for this phenomenon, mostly using classical categories drawn from Boolean logic, such as inclusive and exclusive disjunction (e.g., Sudo 2014 for his analysis of *ya*; cf. Allwood et al., 1977 for a broader discussion regarding the relationship between logic and linguistics). However, these frameworks and categories do not seem to offer a comprehensive explanation for the behavior of these connectives, failing for example to adequately account for their core non-exhaustive interpretation (Smith and Kobayashi 2017). This points to the need for an alternative analytical model. To address this gap, the present study proposes a different analytical approach, following the usage-based model

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adopted by Ariel and Mauri (2018, 2019) in their analysis of the readings of the English disjunctive marker *or*. In their work, Ariel and Mauri propose an approach to linguistic connectives that sets aside correspondences with Boolean operators and instead centers on the speaker's intended message and communicative goals (cf. also the notion of explicatures, see Sperber and Wilson 1986; Ariel 2016). Using naturally occurring data from a Japanese web corpus, this study argues that the connectives under investigation are compatible, in some contexts, with the so-called *separative conjunction* reading (Ariel and Mauri 2018: 967; Jennings 1994: 138). Under this interpretation, the speaker's intent is not to highlight the open-ended nature of the list, but to signal that each coordinand is realized independently, that is, in distinct situations. Furthermore, the analysis shows that this separative conjunction reading may convey iterative or distributive interpretations when the contextual conditions align accordingly.

The structure of the paper is as follows: Section 2 describes the semantic and distributional properties of the three Japanese connectives under investigation. Section 3 critically evaluates existing analyses of the verbal connective *-tari*, arguing that certain interpretations traditionally categorized as aspectual should instead be understood as manifestations of a specific semantic relation between the coordinands. Section 4 demonstrates that these connectives can encode separative conjunction readings in contexts that support exhaustive interpretations. Section 5 illustrates how, because of its ability to encode the independent occurrence of non-co-occurring events or items, the separative conjunction reading can be used to express distributive or iterative meanings. Finally, Section 6 outlines some conclusions and directions for future research.

Most past studies on these connectives have relied on invented and de-contextualized sentences. While such an approach can offer preliminary insights, it is essential to examine natural occurrences in their broad context. This is the only reliable way to understand how speakers decide to use these connectives and what kind of semantic relation is encoded. The analysis is carried out with the aid of attested examples drawn from the Japanese corpus (jpn_news_2005–2008) of the Leipzig Corpora Collection (Goldhahn et al., 2012).¹ The corpus consists of online magazines and randomly collected web pages from 2005 to 2008. The examples selected for the analysis are those that support exhaustive interpretations, that is, situations in which the list introduced by the connective is intended to be complete. These readings are identified either through encyclopedic knowledge (i.e., world knowledge indicating no plausible alternatives exist) or through explicit contextual cues indicating that the items listed are the sole referents intended by the speaker.

Given the exploratory nature of this investigation, a qualitative corpus-based approach is adopted, leaving quantitative considerations to a later stage of the research.

2. Japanese non-exhaustive connectives in potentially exhaustive contexts

Japanese has a rich system of coordinative constructions, including strategies that do not encode a specific semantic relation between the coordinands (i.e., conjunctive, disjunctive or adversative coordination; see Mauri 2008), but rather a property of the set they denote. For example, Japanese has several coordinating connectives that are used specifically to encode non-exhaustive listing (cf. Haspelmath 2007; Mauri and Sansò 2018; Barotto and Mauri 2022), that is, to signal that the coordinands are part of an open set to which additional, unmentioned elements may potentially be added. Let us consider, for instance, the coordinating particle *ya* (1) which is restricted to nouns, the coordinating converb *-tari* (2) which is restricted to verbs and clauses, and the coordinating particle *toka* (3) which shows no syntactic restriction:²

- (1) *Watashi no heya ni wa, konpyūta ya sutereo ga oite-arimasu.*
 1SG GEN room LOC TOP computer ya stereo NOM place:TE-ASP:POL:NPS
 'In my room there is a computer, a stereo, **and such.**' (Chino 2001: 41)
- (2) *Osaka de kaimono o shitari kankoku-ryōori o tabetari shimasu.*
 Osaka LOC shopping ACC do:TARI Korean-meal ACC eat:TARI do:POL:NPS
 'In Osaka, I will do **such things as** shopping and eating Korean food.' (Banno et al., 1999: 215)
- (3) *Koohii toka koocha toka iroirona mono ga arimashita.*
 coffee TOKA tea TOKA various thing NOM exist:POL:PAST
 'There were various things **such as** coffee and tea.' (Maynard, 1989: 106)

In these examples, the coordinating connectives are used to indicate that the mentioned items (e.g. 'computer' and 'stereo' in (1), 'shopping' and 'eating Korean food' in (2) and 'coffee' and 'tea' in (3)) should be conceived as members of a larger set of similar elements. Interestingly, these connectives appear to neutralize, or at least to background, the semantic relation between the coordinands, as they can be interpreted as either non-exhaustive conjunction or non-exhaustive disjunction depending on the context. Grammars and descriptive studies often illustrate this peculiarity by indicating that these connectives may be translated as either 'and' or 'or' depending on the circumstance (cf. for instance Kaiser et al., 2001: 538–540, 656, Frellesvig 2010: 359 regarding *ya*; Smith and Kobayashi 2017, 2018 regarding *-tari* and *toka*).

Because of their ability to encode open-ended lists, these connectives are often labeled as *non-exhaustive connectives* (Kuno 1973; Barotto 2021) or described as connectives that encode non-exhaustive listing or exemplification (cf. Banno

¹ Available at: <http://corpora.uni-leipzig.de/en>.

² Glosses are provided by the author of this paper whenever the original source does not provide them.

et al., 1999; Chino 2001), thus suggesting their incompatibility with exhaustive interpretations. Indeed, Japanese employs a different set of connectives to encode exhaustive listing. For instance, to create closed-ended lists of nouns, the conjunctive connective *to* (4) and the disjunctive connective *ka* (5) are used:

- (4) *Shiroi yuri to akai bara no hana o kaimashō.*
white lily and red rose GEN flower ACC buy:POL:VOC
'Let's buy some white lilies **and** red roses.' (Chino 2001: 33)
- (5) *Kōhī ka kōcha ka nomitai desu ne.*
coffee or tea or drink:DES COP:POL PP
'I'd sure like to drink some coffee **or** tea.' (Chino 2001: 47)

To create closed-ended lists of verbs or clauses, different strategies are available. For instance, the converb *-te* (also known as the *te*-form) functions as the exhaustive conjunctive coordinator as shown in (6). Moreover, the disjunctive connective *ka* can also be used to link verbs and clauses as in (7).

- (6) *Ojii.san-ga yama-de hatarai-te, obaasan-ga mise-no ban-o*
old.man-NOM mountain-at work-COORD old.woman-NOM store-GEN sitting-ACC
shi-ta.
do-PAST
'The old man worked at the mountain, **and** the old woman tended the store.' (Yuasa and Sadock 2002: 92, quoted in Haspelmath 2004: 34)
- (7) *Ryokō ni iku ka ikanai ka, mada kimeteimasen.*
trip LOC GO OR GO:NEG OR still decide:STA:POL:NEG
'I still haven't decided whether I'm going to take a trip **or** not.' (Chino 2001: 47)

The coordinative constructions presented above can thus be schematized as shown in Table 1.

Table 1
Japanese coordinating constructions.

	Nouns		Verbs	
	Conjunction	Disjunction	Conjunction	Disjunction
Exhaustive coordination	<i>to</i>	<i>ka</i>	<i>-te</i>	<i>ka</i>
Non-exhaustive coordination		<i>ya, toka</i>		<i>-tari, toka</i>

This schema illustrates the general picture. Nevertheless, different studies note that Japanese non-exhaustive connectives can also appear with seemingly exhaustive interpretations in specific contexts. For instance, while investigating the acquisition of Japanese connectives, Ichikawa (1991) notes that L2 learners struggle to understand how to use *to* (the exhaustive connective for nouns) and *ya* (the non-exhaustive connective for nouns) in some contexts. When a group of L2 learners was asked to describe the Japanese custom of going to temples and shrines on New Year's Day, one of them produced the following sentence (Ichikawa 1991: 62):

- (8) *Nihon-jin wa shōgatsu ni jinja to o-tera ni iku.*
Japanese-person TOP new.year LOC Shinto.shrine **and** HON-temple LOC go
'On New Year's Day, Japanese people go to Shinto shrines **and** Buddhist temples.'

The L2 learner chose to use the connective *to* to coordinate *jinja* 'Shinto shrines' and *o-tera* 'Buddhist temples' because, according to him, Japanese people typically do not visit other types of religious facilities during New Year's Day (e.g. churches). Thus, *jinja* and *o-tera* constitute an exhaustive set. Ichikawa notes that many grammars and textbooks for L2 learners explain the difference between *to* and *ya* solely in terms of (non-)exhaustivity: *to* encodes exhaustive conjunction, whereas *ya* is usually described as the non-exhaustive connective encoding open-ended lists. The student's reasoning can therefore be schematized as follows:

- (9) a. *jinja to o-tera* = exhaustive
= On New Year's Day, Japanese people go (only) to Shinto shrines and to Buddhist temples (there are no other options).
- b. *jinja ya o-tera* = non-exhaustive
= On New Year's Day, Japanese people go to Shinto shrines, Buddhist temples, *and so on* (there are other similar options, e.g. *kyōkai* 'churches')

Assuming this perspective, the student's choice to use *to* instead of *ya* in that specific context is perfectly understandable: *jinja* and *o-tera* are indeed the only two members of the set. While it is important to note that (9a-b) are correct interpretations of the two coordinating constructions respectively (and it is possible to create or find utterances where *jinja ya*

o-tera means ‘Shinto shrines, Buddhist temples, and so on’), still the formulation in (8) does not sound natural to native speakers. Ichikawa (1991: 62) notes that, to express that specific idea, Japanese native speakers would rather say:

- (10) *Nihon-jin wa shōgatsu ni wa jinja ya o-tera*
 Japanese-people TOP new.year LOC TOP shinto.shrine YA HON-temple
ni iku.
 LOC go
 ‘On New Year’s Day, Japanese people go to Shinto shrines or Buddhist temples.’

In other words, for native speakers, in this specific context, the use of *ya* is deemed more appropriate and correct than the use of *to*, suggesting that *ya* is indeed compatible with at least certain exhaustive contexts. The possibility of exhaustive interpretations of *ya* has also been discussed in formal approaches (e.g., Hayashishita and Bekki 2012; Tanaka 2016; among others), where notions such as *monads* and the distinction between the reference to singular or plural objects are used to explain the differences between *ya*, *to* and *ka* (the exhaustive disjunctive connective).

Beyond the exhaustive interpretation of *ya* in specific contexts, it is also well acknowledged in the literature that the coordinating converb *-tari* can perform other functions beyond non-exhaustive coordination (see for instance Martin 1975; Alpatov 1997: 392–394; Narrog 2012: 145–148), such as marking the discontinuous repetition of two (or more) opposite actions over a single time frame:

- (11) *Nisando wakamono no mae o ittari kitari shita.*
 two.three.times young.man GEN front ACC go:TARI come:TARI do:PAST
 ‘Two or three times he came and went in front of the young man.’ (Alpatov 1997: 393)

This type of function is also described in manuals for L2 learners. For instance, Chino (2001: 109) notes that *-tari* can be used to indicate “repetition of contrasting actions” (cf. (12a)) or, when used with the same verb in positive and negative forms, it means “sometimes I do and sometimes I don’t” (cf. (12b)).

- (12) a. *Konshū, kabu wa agattari sagattari shiteimasu.*
 this.week stock TOP go.up:TARI go.down:TARI do:STA:POL
 ‘This week, stocks are going up and down.’ (Chino 2001: 109)
- b. *Nichiyōbi ni wa, terebi o mitari minakattari shimasu.*
 sunday DAT TOP TV ACC see:TARI see:NEG:TARI do:POL
 ‘Sometimes I watch TV on Sundays and sometimes I don’t.’ (Chino 2001: 110)

It should be noted that, in all these instances, the lists of events or actions encoded by *-tari* are exhaustive, in the sense that the mentioned events or actions are not representative of a larger group. This fact is noted by Alpatov (1997: 392) who clearly distinguishes two “types” of *-tari*: one type with an “intermittent” meaning (as in example (11)) and one with a “representative” meaning (as in example (2)).

To sum up, the connectives under analysis, which have been described in the literature as encoding non-exhaustivity, seem to manifest also some exhaustive meanings, at least in specific contexts. While these exhaustive meanings have been recognized in the literature, studies on the issue have tended to focus their attention on these connectives separately. As a consequence, meanings other than non-exhaustivity have frequently been described using categories that are proper to the syntactic level to which the connective under analysis is restricted (i.e., the reference to singular or plural objects in the case of *ya* or aspectual meanings in the case of *-tari*). Indeed, the fact that these connectives operate at different syntactic levels may have influenced the way they have been analyzed. This paper will approach this phenomenon differently, by considering the other meanings of Japanese non-exhaustive connectives together. Our aim is to identify potential connections or similarities between these meanings and to explore the possibility of a shared underlying explanation.

3. The aspectual nuance

As introduced in the previous section, the coordinating converb *-tari* has been linked to notions such as distributivity (i.e., events distributed across different participants or locations, cf. Dressler 1968) and iterativity (i.e., the repetition of an event, cf. Comrie 1976), since it can express the repeated performance of one or more actions. While discussing the expression of event plurality in Japanese, Alpatov (1997: 392) notes that the usage of *-tari* is “connected with the semantic zone of the multiplicative and distributive”. To better explain this concept, Alpatov uses the term “intermittent” (1997: 392–393), showing that *-tari* can encode the discontinuous iteration of two or more actions or events, which repeat and alternate with one another over a given period of time. While in some cases, like in example (11), the “intermittent” interpretation is reinforced by adverbs or other aspectual elements (i.e. *nisando* ‘two or three times’), in other cases, this interpretation seems entirely due to the use of *-tari*. For instance,

- (13) *Marude inukoro mitai ni, fuzakeattari kenka o shitari.*
 quite puppy like ADV play:TARI quarrel ACC do:TARI
 ‘They were like puppies. At times they played, at others quarreled.’ (Alpatov 1997: 393)
 (lit.) ‘Quite like puppies, they play and they quarrel.’

In the sentence above, there are no adverbs explicitly indicating the repetition or alternation of the actions *fuzakea*[ru] ‘to joke, to play’ and *kenka o* [suru] ‘to quarrel’. On the contrary, the iterative interpretation seems to be activated by the use of *-tari* to mark opposing actions or events. Similar instances are also highlighted by Narrog (2012: 145) in his analysis of modality in Japanese.

Since *-tari* is a verbal suffix (cf. the notion of *converb* in Haspelmath 1995), one might be tempted to attribute this “intermittent” meaning to some intrinsic aspectual property, possibly inherited from its diachronic development. However, this does not seem to be the case. While it is true that *-tari* originated from an aspectual auxiliary, it should be noted that in Old Japanese, *-tari* marked resultative perfect, denoting the completion of an event (Shinzato 2005; Narrog 2012) and its modern counterpart is the past/perfective marker *-ta*, which is also used to denote perfect aspect (Iwasaki 2013: 132–133).³ In this regard, Narrog (2012: 147) notes that Modern Japanese *-tari* has lost its aspectual meaning, and that the possibility of using *-tari* to mark iterative events relates to a lower factuality, “since through *-tari* the event becomes marked as unspecific, i.e. not bound to a specific time, and ambiguous between a singular and a plural reading”. This means that, over time, *-tari* has lost its original aspectual meaning and has become a marker of generic events (later extending to exemplifying/non-exhaustive functions). For these reasons, explaining the “intermittent” iterative meaning by positing a hypothetical imperfective aspectual value is rather problematic. Moreover, we should note that once we consider actual data drawn from corpora of Japanese, in some cases the “intermittent” meaning is quite clear as shown in (14), while in other cases it is more subtle (for example, lacking a clear iterative interpretation) as shown in (15).

- (14) *Kaishain-josei wa saikin, Takami yōgisha ga nicchū ni*
 employ-woman TOP recently Takami suspect NOM daytime LOC
manshon-shūhen o jitensha ya toho de, atemona-sa-sōni ittari
 condominium-around ACC bicycle YA foot INS random-NML-looking go:TARI
kitari shite-iru sugata o yoku mikaketa.
 come:TARI DO:TE-ASP form ACC often happen.to.see:PAST
 ‘A female office employee said that she had recently often seen the suspect Takami wandering **back and forth** around the apartment building by bicycle **or** on foot during the day.’ (lit. ‘coming and going apparently without an aim’)

- (15) *Jiyū-undai no bōru-bu o kotei-shitari furī ni shitari*
 ball.head-tripod GEN ball-component ACC fix-do:TARI free DAT do:TARI
suru tameno shimetsuke nobu [...]
 do for tightening knob
 ‘The tightening knob for **fixing or freeing** the ball part of the ball head tripod [...]’

Another issue that should be considered is the fact that *-tari* assumes this exhaustive “intermittent” iterative meaning only when it is used as a connective to coordinate at least two verbal phrases or clauses. When *-tari* is used to mark a single verb or clause, it functions as a *general extender* (cf. Overstreet 1999) to indicate that the marked event should be construed as part of a larger category of similar events (exemplifying or representative function, ‘X and other similar events’) or to perform pragmatic functions (such as hedging, see Barotto 2018), but it does not indicate, for instance, the iteration of a single action or event.

Interestingly, aspectual interpretations are not unique to *-tari*. Despite being restricted to nouns and noun phrases, exhaustive interpretations of *ya* seem to convey similar interpretations. For instance, in (14), the construction *jitensha ya toho de* ‘by bicycle or on foot’ is used to indicate that in some cases the suspect wandered around the condominium on a bicycle, while in other cases he went on foot. Let us consider another example:

- (16) *Nihon-kōtsū-kanri-gijutsu-kyōkai ga 06-nen ni*
 Japan-traffic-control-technology-association NOM 06-year DAT
jisshi-shita zenkoku anketo de wa, yōchien ya hoikusho
 carry.out-do:PAST national questionnaire COP TOP kindergarten YA nursery
ni kayou ko o motsu hogosha yaku 6500-nin no yaku
 LOC attend kid ACC have guardian about 6500-CLF GEN about
4-wari ga “san-nin nori o mitomeru beki da” to kaitō.
 4-ten.percent NOM three-CLF ride ACC approve IMP COP QT answer
 ‘In a nationwide survey conducted by the Japan Traffic Management Technology Association in 2006, about 40% of approximately 6,500 parents with children attending **kindergartens or nursery schools** responded that “three-seater vehicles should be allowed”.’

In (16), a specific type of bicycle arrangement with two seats for small children is discussed. The speaker reports the opinions of parents having at least one small child attending *yōchien* ‘kindergartens’ or *hoikusho* ‘nursery schools’. In other words, the speaker is considering (at least) two different groups of people: on the one hand, parents of children attending *yōchien* ‘kindergartens’, on the other, parents of children attending *hoikusho* ‘nursery schools’. Crucially, the following reported statement is true for both groups, that is, both groups agree that three-seater bicycles should be allowed. When this interpretation is considered, it could be argued that, in this context, the connective *ya* seems to convey a sort of distributive nuance as well. Another example is provided in (17).

³ As noted by Frellesvig (2010: 330), around Late Middle Japanese, the perfect auxiliary *-tari* developed into three different verbal suffixes: i) the past/perfect *-ta*, ii) the past/conditional *-tara* and finally, our object of analysis, iii) the representative *-tari*.

- (17) *Sonotabi ni uranaishi ya reikan no tsuyoi hito ni*
 each.time DAT fortuneteller YA inspiration GEN strong person DAT
mite morattari [...]
 look.GRD receive:TARI
 'Each time, I consult a **fortune teller or someone with strong psychic abilities** [...]'

In (17) the speaker describes how he deals with bad luck. The interpretation is that, during a series of visits (cf. *sonotabi* 'each time'), in some cases he consulted a fortune teller, while on other occasions, he consulted other similar diviners. Thus, again, a distributive interpretation is conveyed. This raises the question of how similar these meanings conveyed by *-tari* and *ya* actually are. Let us consider the following example of *-tari*, while comparing it with the examples in (16) and (17).

- (18) *Shashin o shumi to shitari, satsuei ga shigoto dattari*
 picture ACC hobby as do:TARI photographing NOM job COP:TARI
suru hito nitotte, kamera ya renzu wa mochiron, sankyaku ya
 do people for camera YA lens TOP of.course tripod YA
undai mo hijōni jūyōna kizai
 platform also extremely important gear
 'For those people who take pictures as a hobby or for those who take pictures as a job, in addition to camera and lens, of course, tripod and camera platform are also very important tools.'

In (18), we can find a very similar situation to (16) and (17), despite the coordinands being verbs rather than nouns. The author refers to two groups of people (those who take photos as a hobby and those who do the same as a job) that usually do not overlap, and he points out that what follows is true for both, that is, both groups need specific tools to take good pictures.

Finally, although the use of *toka* in potentially exhaustive contexts has not been investigated in depth (unlike in the case of *ya* and *-tari*), it is possible to find interesting occurrences in Japanese corpora that show the same distributive interpretation, such as:

- (19) *"Shinkon-ryokō" wa "honeymoon trip" toka "honeymoon" to imasu.*
 newlywed-trip TOP honeymoon trip TOKA honeymoon QT call:POL
 '[In English] "Shinkon-ryokō" is called "honeymoon trip" or "honeymoon".'
- (20) *Sonnawakede, SSD toka RAM disuku o tsukau to, iroirona koto*
 for.that.reason SSD TOKA RAM disk ACC use if various thing
ga kaiteki-ni nattari shite tanoshii.
 NOM comfortable-ADV become:TARI do:TE fun
 'For this reason, using an SSD or a RAM disk can make various things more comfortable and enjoyable.' (lit. 'various things become comfortable and enjoyable')

In (19), the speaker indicates that the concept expressed as "[s]hinkon-ryokō" (lit. newlywed trip) in Japanese is called "honeymoon" or "honeymoon trip" in English. Again, there is a subtle distributive nuance, in the sense that both expressions are possible and valid, although they are used in different situations and not at the same time. In (20), the speaker indicates that 'various things become comfortable and enjoyable' is true if users use an SSD but also if users use a RAM disk, that is, in both cases.

In light of the above, we can say that there are some similarities between the exhaustive occurrences of Japanese non-exhaustive connectives, and these similarities seem to revolve around notions such as distributivity or alternation/iteration. Nevertheless, because these connectives are not aspectual markers, a different type of explanation is required.

4. Between 'and' and 'or': separative conjunction

As previously noted, *-tari* can be used to convey distributivity and other aspectual values only when it is used as a connective to coordinate at least two verbs. Starting from this observation, we argue that these aspectual meanings do not arise from *-tari* functioning as an aspectual marker, but rather from the way it operates as a coordinating connective in certain contexts, namely, the specific type of semantic relation it establishes between the coordinands. We also argue that the same holds true for *ya* and *toka*, despite the different syntactic restrictions.

In Section 2, it was shown that, when these connectives are used to encode non-exhaustivity, they do not seem to encode a specific semantic relation between the coordinands, to the point that some descriptive grammars note that they can be translated as 'and' or 'or', depending on the context. We argue that, in the case of exhaustive interpretations, this indeterminate position between 'and' and 'or', between conjunction and disjunction, still applies. If we consider the occurrences analyzed in the previous sections, we can see that *ya*, *-tari* and *toka* are used to indicate that all coordinands do potentially occur, as in the case of conjunctive constructions. However, when one element occurs, the other does not occur or cannot occur, thereby conveying the meaning of alternation or distributivity. This incompatibility between the occurrence of coordinands is similar to the type of semantic relation typically shared by coordinands in disjunctive constructions. Depending on the nature of the elements (entities or events) and the type of utterance, this peculiar semantic relation is actualized in different ways. For instance, *-tari* can be used to indicate that two opposite actions can both occur, but, of course, not at the same time (e.g., 'coming and going' in (14), 'fixing or freeing' in example (15)). In other instances, *ya* and *toka* signal the existence of two separate groups or situations, with the utterance holding true in both cases.

The overlapping position between 'and' and 'or' of these connectives has represented a true challenge for formal approaches that try to preserve the semantic parallelism between linguistic connectives and logical operators (cf. Grice 1989).

For instance, [Sudo \(2014\)](#) argues that, regardless of the exhaustivity parameter, *ya* should be analyzed as inclusive disjunction with a conjunctive implicature in upward-entailing contexts. Inclusive disjunction entails that at least one, but possibly all the disjuncts are true. However, as noted by [Smith and Kobayashi \(2017, 2018\)](#), inclusive disjunction cannot fully account for the non-exhaustive interpretations of these markers. For example,

- (21) a. *Taro-wa heya-o sooji-tari (eigo-o benkyoosi-tari) si-ta no?*
 Taro-TOP room-ACC clean-tari English-ACC study-tari do-PST Q
 'Did Taro clean his room, study English, or do something like that?'
 ([Smith and Kobayashi 2017](#): 209)
- b. *Taro-ya/toka Hanako-ga ki-tara, Yosuke-wa ocha-o dasu.*
 T-ya/toka H-NOM come-if Y-TOP tea-Acc serve
 'If Taro or Hanako (or someone else) comes to the party, Yosuke serves tea.'
 ([Kobayashi and Smith 2017](#): 1)

As noted by the authors regarding (21a), “the addressee may reply affirmatively if Taro did just one of the actions or something similar to them” ([Smith and Kobayashi 2017](#): 209). That is, Taro may have cleaned his room, or he may have studied English, but crucially, he may also have done neither and instead performed some other comparable activity. Therefore, regarding Sudo’s analysis, they note that “[s]uch an analysis would incorrectly predict that questions with *-toka/-tari* may not be answered in the affirmative if an unmentioned alternative holds, contrary to fact” (2017: 213). In other words, an inclusive disjunction analysis cannot account for such cases, since under inclusive disjunction, the two disjuncts (i.e., ‘clean his room’, ‘study English’) cannot be both false. Regarding (21b), they also note that “the disjunction need not be truly inclusive [...] it need not be the case that one of Taro or Hanako comes for Yosuke to serve tea” ([Kobayashi and Smith 2017](#): 2). Therefore, if non-exhaustive connectives conveyed inclusive disjunction, we would expect at least one of Taro or Hanako to come, but this is not the case. Because of their non-exhaustivity (cf. ‘or someone else’), it can also be the case that one individual, who is similar to Taro and Hanako in some capacity, comes. Therefore, it might be Taro, it might be Hanako, it might be both, but, crucially, it might also be neither.

At this point, one might be tempted to use the inclusive disjunctive interpretation to explain at least the “exhaustive” occurrences of non-exhaustive connectives. As [Ariel and Mauri \(2018, 2019\)](#) observe in their analysis of English *or*, an inclusive reading is expected to explicate that ‘possibly X, possibly Y (and) possibly X and Y’. Therefore, for instance, a truly inclusive construction such as

- (22) *All the sections are kind of self-sufficient, having kitchen units **and/or** bathrooms* (LSAC, quoted by [Ariel and Mauri 2018](#): 964).

introduces ‘kitchen units’, ‘bathrooms’ and ‘both kitchen units and bathrooms’ at the same level, and thus can be paraphrased by:

- (23) *All the sections are kind of self-sufficient, having kitchen units **or** bathrooms, **or both** kitchen units and bathrooms.* ([Ariel and Mauri 2019](#): 42)

However, such an interpretation is incompatible with the “exhaustive” occurrences of *ya*, *-tari* and *toka* exemplified in the previous sections. Let us consider again the examples provided in the previous sections, repeated here for convenience:

- (24) *yōchien ya hoikusho ni kayou ko o motsu hogosha yaku*
 kindergarten YA nursery LOC attend kid ACC have guardian about
6500-nin no yaku 4-wari ga “san-nin nori o mitomeru
 6500-clf GEN about 4-ten.percent NOM three-clf ride ACC approve
beki da” to kaitō.
 IMP COP QT answer

‘[...] about 40% of approximately 6.500 parents with children attending **kindergartens or nursery schools** responded that “three-seater vehicles should be allowed”.’

- (25) *Shashin o shumi to shitari, satsuei ga shigoto dattari*
 picture ACC hobby as do:TARI photographing NOM job COP:TARI
suru hito nitotte, kamera ya renzu wa mochiron, sankyaku ya
 do people for camera YA lens TOP of.course tripod YA
undai mo hijōni jūyōna kizai.
 platform also extremely important gear

‘**For those people who take pictures as a hobby or for those who take pictures as a job**, in addition to camera and lens, of course, tripod and camera platform are also very important tools.’

- (26) *Jiyū-undai no bōru-bu o kotei-shitari furī ni shitari*
 ball.head-tripod GEN ball-component ACC fix-do:TARI free DAT do:TARI
suru tameno shimetsuke nobu [...]
 do for tightening knob
 ‘The tightening knob for **fixing or freeing** the ball part of the ball head tripod [...]’

- (27) *“Shinkon-ryokō” wa “honeymoon trip” toka “honeymoon” to imasu.*
 newlywed-trip TOP honeymoon trip TOKA honeymoon QT call:POL
 ‘[In English] “Shinkon-ryokō” is called **“honeymoon trip” or “honeymoon”**.’

Although these occurrences are theoretically compatible with the ‘possibly both’ interpretation, they seem to convey a stronger reading than ‘inclusivity’, because, as already noted, the speaker commits to all the coordinands being the case ([Ariel and Mauri 2018](#): 968). In (24), the speaker reports that the survey includes both parents of children attending *yōchien*

'kindergartens' and parents of children attending *hoikusho* 'nursery schools'.⁴ Similarly, in (25), the speaker notes that tripods are very important for both people who take pictures as a hobby and professional photographers. In (26), the speaker notes that the tightening knob can be used for both freeing and fixing the tripod. Finally, in (27), the speaker indicates that the concept "*shinkon-ryokō*" is called both *honeymoon* and *honeymoon trip* in English (although, of course, not at the same time). Following Ariel and Mauri (2018: 966), this point can be further demonstrated by considering a situation where the addressee declares the utterance false by negating one of the coordinands. In an inclusive disjunctive construction, the addressee cannot declare the speaker's utterance false by negating one of the alternatives. For example, let us consider again the instance of inclusive disjunction previously discussed, repeated here for convenience.

- (28) A: All the sections are kind of self-sufficient, having kitchen units **and/or** bathrooms.
B: ?? That's not true. My section doesn't have a kitchen. (Ariel and Mauri 2018: 966)

Since A did not commit to every section having a kitchen, it cannot be declared false by negating one of the coordinands. However, when we consider our examples, all these utterances can be declared false if one of the coordinands is negated. For instance:

- (29) "*Shinkon-ryokō*" wa "*honeymoon trip*" **toka** "*honeymoon*" to *imasu*.
newlywed-trip TOP honeymoon trip TOKA honeymoon QT call:POL
[In English] "*Shinkon-ryokō*" is called "**honeymoon trip**" or "**honeymoon**".
That is not true, it is not called "honeymoon"! → (29) is false

- (30) *Shashin o shumi to shitari, satsuei ga shigoto dattari*
picture ACC hobby AS do:TARI photographing NOM job COP:TARI
suru hito nitote, kamera ya renzu wa mochiron, sankyaku ya
do people for camera YA lens TOP of.course tripod YA
undai mo hijōni jūyōna kizai.
platform also extremely important gear
'For those people who take pictures as a hobby or for those who take pictures as a job, in addition to camera and lens, of course, tripod and camera platform are also very important tools.'
That is not true, tripod and camera platform are not important tools for people who take pictures as a hobby! → (30) is false

- (31) *yōchien ya hoikusho ni kayou ko o motsu hogosha yaku*
kindergarten YA nursery LOC attend kid ACC have guardian about
6500-nin no yaku 4-wari ga "san-nin nori o mitomeru
6500-CLF GEN about 4-ten.percent NOM three-CLF ride ACC approve
beki da" to kaitō.
IMP COP QT answer
[...] about 40% of approximately 6,500 parents with children attending **kindergartens or nursery schools** responded that "three-seater vehicles should be allowed".
That is not true, parents with children attending kindergartens did not answer the survey! → (31) is false

In the occurrences under analysis, since the speakers commit to all the coordinands being the case, the falsity of one of them is sufficient to render the utterance false. This is incompatible with truly inclusive readings.

The above discussion shows why these occurrences cannot be considered instances of inclusive disjunction. At the same time, however, they cannot be considered cases of conjunction either, despite the speaker's commitment to both or all alternatives. Indeed, by using these specific coordinating constructions, the speaker seems to emphasize that each coordinand should be interpreted as an independent separate alternative, group or event.

Given the peculiarities described above, we argue that *ya*, *toka* and *-tari* can be used to encode a specific type of semantic relation that can be paraphrased as conjunction in alternation, whereby each element is valid or true, but not jointly or simultaneously. More specifically, this type of semantic relation seems to correspond to what Ariel and Mauri (2018: 964–970) label 'Conjunctive Or' with regard to the English disjunctive marker. Following their analysis and Jennings's (1994) terminology, the label 'separative conjunction' will be adopted to discuss the Japanese examples examined here, due to its transparency in reflecting the speaker's intended meaning.⁵

Arguing against the classical division between inclusive vs. exclusive disjunction to explain English *or*, Ariel and Mauri (2018) identify six main readings, each representing an actual, speaker-intended interpretation, using a corpus-based methodology. In their search for possible inclusive *or* constructions, they conclude that bare *or* (as opposed to *and/or*)

⁴ Interestingly, the overlap of these two groups is theoretically possible but quite unlikely. Both facilities take children under school age but have different functions. *Hoikusho* is a childcare facility for children whose parents are not available during the daytime, due for instance to their work, illness, or other reasons. In contrast, *yōchien* is an educational facility where children can acquire basic study skills.

⁵ Ariel and Mauri (2018) discuss the *separative conjunction* reading as part of a broader 'Conjunctive Or' reading, which covers both 'separative conjunction' and 'free alternative'. While the former highlights the distinctness of the alternatives, the latter highlights the free choice between them (cf. Zimmermann, 2000; Geurts 2005). Although some Japanese examples appear to be compatible with the test for the Free alternative reading ('any of X and Y'), in other cases the boundary between the two readings is considerably less clear, making any finer-grained classification at this stage problematic. I therefore adopt the term *separative conjunction* as an umbrella label and employ it more broadly than Ariel and Mauri (2018). Indeed, even in those instances that might be classified as *free alternative* under their test, it is still possible to argue that the speaker is committed to all coordinands while highlighting their distinctness: all may occur, but only in separate situations or for different groups of individuals.

does not give rise to an inclusive interpretation. However, they do find cases where (i) the speaker intends to convey multiple alternatives and (ii) commits to both/all alternatives in some sense, thus (iii) without conveying a mutually exclusive ‘not both’ interpretation (see [Ariel and Mauri 2018](#): 968). For instance:

- (32) a. FRANK: it’s, ...easier to do naked eye. [...]
Or or binoculars. (SBC: 019; quoted in [Ariel and Mauri 2018](#): 965)
- b. DARLENE: I didn’t even wear it to Jennifer or Ann’s wedding. (SBC: 052; quoted in [Ariel and Mauri 2018](#): 965)

[Ariel and Mauri \(2018, 2019\)](#) note that this type of *or* construction fails the test for inclusivity (that is, ‘possibly X, possibly Y (and) possibly X and Y’). They argue that in such cases the speaker commits to ‘X and Y’ both being *necessarily* the case, as in (32a), where both naked eye and binoculars are asserted to be easier (than telescope). These constructions are puzzling because in some way they seem to neutralize the distinction between conjunction and disjunction. Unsurprisingly, in these occurrences, *or* can be replaced by *and*.

Therefore, a separative conjunction reading can be defined as one in which the speaker necessarily commits to both alternatives being the case, although each is (somehow) separate from the other. In most cases, this means that they occur in separate situations. This reading is motivated by the speaker’s intent to highlight the “distinctness rather than the cumulativeness of the possibilities mooted” ([Jennings 1994](#): 138). An example of this reading is provided in (33).

- (33) JIM: But for mathematics **or** for science, [...]
it’s an opportunity for them (SBC: 017)
→ Jim said that for mathematics or for science, that is (to say) for both of mathematics and science it’s an opportunity ([Ariel and Mauri 2018](#): 967)

While [Ariel and Mauri’s](#) analysis is meant to describe the usage range of the English connective *or* without aiming for cross-linguistic generalization, we can reasonably assume that such readings are available in any natural language. In other words, speakers across languages need some linguistic means to address situations where there are multiple alternatives, while, at the same time, committing to all of them being the case. Because of its borderline position between conjunction and disjunction, English can convey this semantic relation using both *and* and *or*, that is, both the conjunctive and the disjunctive marker. We argue that, in Japanese, the separative conjunction reading can be encoded by *ya*, *-tari* and *toka*, likely because of their peculiar position between conjunction and disjunction. Let us consider again the previous occurrences, in light of the peculiarities of the separative conjunction reading. In (24) and (25), the speaker commits to both coordinated elements but construes them as independent sets of individuals: parents who have children attending kindergartens vs. parents who have children attending nursery schools in (24), people who take pictures as a hobby vs. people who take pictures professionally in (25). In (26) and (27) the speaker commits to both coordinated elements, but as separate, independent situations. So, in (26), the tightening knob is sometimes used to fix the ball part of the tripod, and in other cases, it is used to free it. In (27), “shikon-ryokō” is sometimes called *honeymoon* and in other cases it is called *honeymoon trip*.

Let us consider some other instances of this separative conjunction reading encoded by Japanese non-exhaustive connectives:

- (34) *Mechiren kuroraido wa hito ga kyūnyū-shitari, hifu kara*
methylene chloride TOP people NOM inhalation-do:TARI skin from
haittari suru to chūsū-shinkei ya ketsueki nado ni
enter:TARI do when central-nerve and blood etcetera DAT
akueikyō ga aru to iu
adverse.effect NOM exist QT say
'Methylene chloride is said to have adverse effects on the central nervous system and blood when **inhaled or absorbed through the skin**'
- (35) *Arayuru saibō ya soshiki ni naru koto ga dekiru mausu no*
every cell **ya** tissue DAT become NML NOM do:POT mouse GEN
haisei kan saibō o tsukatte tokuteino idenshi o
embryonic stem cell ACC use:TE specific gene ACC
sōsa-shita moderu dōbutsu o tsukuridashi, [...]
manipulation-do:PAST model animal ACC produce:AND
'Using mouse embryonic stem cells, which can develop into **any cell or tissue**, model animals are created by manipulating specific genes, [...]'
- (36) *Hoka-no yūzā o “dōshi” toka “raibaru” toshite kuwaeru koto mo kanō.*
other-ADJ user ACC comrades TOKA rival as add NML also possible
'You can also add other users as **“comrades” or “rivals”**.'

In each case, the speaker presents two alternatives and commits to both, thus “foregrounding the independence of each from the other” ([Ariel and Mauri 2018](#): 967). Thus, for instance, in (34), methylene chloride is dangerous both when it is inhaled and when it is absorbed through the skin. In (35), it is said that stem cells may develop into (other types of) cells, but also into tissue, depending on the circumstances. Again, the speaker commits to both outcomes, albeit for different stem cells. Finally, in (36), users can be added as either comrades or rivals. This means that some users will be added as “comrade”, other users will be added as “rival”: the speaker commits to both alternatives while construing two separate sets of users.

5. The occurrence of separate events

As noted in Section 3, in Japanese, some of these separative conjunction occurrences have been analyzed as linked to aspectual notions such as iteration or distribution (cf. Alpatov 1997: 392 with regard to *-tari*). In this section, we will try to explain how the separative conjunction reading can give rise to aspectual interpretations.

Mauri (2008: 80) notes that coordinating relations can be described along two dimensions: co-occurrence and non-co-occurrence. Conjunction (or *combination*, in Mauri 2008) is located on a co-occurrence dimension where conjuncts are asserted as co-occurring. By contrast, disjunction (or *alternative* in Mauri 2008) is located on a non-co-occurrence dimension, where the disjuncts are interpreted as mutually replaceable non-co-occurring possibilities. Let us briefly focus on those disjunctive readings in which the speaker commits to only one alternative being the case. Since the disjuncts are conceptualized as equivalent possibilities, this means that given a slot *x* in a possible world, it can be occupied by only one of the mentioned disjuncts (Mauri 2008: 180). It follows that, until a disjunct is actualized, either disjunct could be the non-actualized one and therefore, for instance, both alternatives can be conceptualized and thus encoded as irrealis. This is exactly what happens in Japanese, where *ka*, an irrealis interrogative marker, stresses that the linked elements should be conceived as a set of paradigmatic possibilities, and that only one of them will ultimately be situated on the temporal axis of occurrence. For example, consider example (37).

- (37) *Basu ka densha de Kyōto ni ikimasu.*
 bus or train INS Kyoto LOC GO:POL:NPST
 'I will go to Kyoto by bus or train.'

In the end, one means of transportation will be selected, and the speaker will decide whether to reach Kyoto by bus or by train. The non-selected alternative will not be realized. Therefore, at the moment of enunciation, both disjuncts are construed as possibilities located on the paradigmatic axis, rather than on the temporal axis of realis occurrences.

In the previous section, it was shown that, in some disjunctive readings, the speaker can commit to both mentioned disjuncts being the case, in the sense that they are both realized albeit independently (i.e., separative conjunction reading). In such cases, the disjuncts need to be construed as (at least potentially) actual and occurring. However, at the same time, the occurrence of each alternative must be construed as separate from that of the other(s). To account for this reading, a different dimension is needed, namely, simple occurrence dimension, which concerns events that are (or may be) realized, but in separate situations (i.e. the events do not co-occur). In other words, we are now investigating the actualization of occurring but not co-occurring events. This is also likely the reason why this reading is metaphorically situated between 'And' and 'Or' (that is, between conjunction and disjunction): it encodes situations in which the alternatives are all located on the dimension of occurrence (thus as in conjunction), while being not co-occurring at the same time or in the same situation (thus as in disjunction). Considering this, it is not surprising that some languages such as English convey this reading by means of both the disjunctive marker and the conjunctive marker. Moreover, it is also noteworthy that other languages employ connectives that semantically seem to straddle this division, covering some conjunctive and some disjunctive readings, as is the case for *ya*, *-tari* and *toka* in Japanese.

In such a situation, it becomes pivotal to understand how the events are related to each other with respect to their position on the temporal axis. In fact, the linked alternatives are construed as both real, but not jointly real (unlike conjunction). This means that at the time one alternative is real, the other is not, and vice versa. For example, in the sentence 'the tightening knob for fixing or freeing', 'fixing' and 'freeing' are both real, but when 'fixing' is real, 'freeing' is not, and vice versa. This process of locating elements characterized as 'both are real but not jointly real' on the temporal axis may yield further interpretations. Let us consider the following occurrences.

- (38) *Asou shusho wa 8-nichi, yuruyakana sakugen.haba o*
 Aso prime.minister TOP 8-day gradual reduction ACC
shuchosuru keizaikai ya rodokumiai no daihyo to
 advocacy:do business.world YA labor.union GEN representative with
aitsuide kaidanshi, iken o kita.
 subsequently conversation:do:GRD opinion ACC hear:PAST
 'On the 8th, Prime Minister Aso met in succession the representatives of the business community and labor unions who advocated for a gradual reduction and listened to their opinions.'

In this case, the key word is *aitsuide* 'subsequently', which means that the Prime Minister did not meet both groups together, but separately, one after the other. Thus, for the events to be construed as 'both real but not jointly real' on the temporal axis, the event needs to be iterated at least twice, with different participants.

The iterative interpretation is even stronger when the events are semantically opposed and the addressee is asked to construe the two events as iterating in alternation, or when the speaker provides some explicit aspectual adverbs. For instance,

- (39) *hyojisareru shashin no setto o susumetari modoshitari dekiru.*
 display:do:PASS picture GEN set ACC advance:TARI put.back:TARI POT
 'you can move forward or move backward the set of pictures that is displayed.'

In other cases, a distributive interpretation prevails. Here, the “distinctness” is given not by alternation over time (i.e., iteration), but by the elements being scattered across different groups. For example, consider the following occurrence:

- (40) *Kashiwazaki-shi de wa 59 tōhyōsho no uchi 18 tōhyōsho*
 Kashiwazaki-city LOC TOP 59 polling.place GEN inside 18 polling.place
ga hinanjo to “dōkyo”. Tsuitate de hinanjo no ikkaku ni
 NOM shelter with coexistence. Screen STR shelter GEN corner LOC
tōhyō-basho o kakuhō-shitari, betsuno heya ni setsuei-shitari
 voting-place ACC guarantee-do:TARI different room LOC construction-do:TARI
shita.
 do:PAST
 ‘In Kashiwazaki, 18 out of 59 polling stations were “co-located” with evacuation shelters. Voting spaces were secured by setting them up in a corner of the shelters with partitions, or by arranging them in separate rooms.’

In this sentence, the author refers to an election taking place after an earthquake. In 18 polling stations in Kashiwazaki, people were forced to set up voting spaces within the shelters. In some of them, the voting space was set up in a corner of the shelter using partitions, while in others, a separate room for voting was arranged. Both solutions were activated, but in different polling stations.

- (41) *Shutsudai misu wa izuremo kokugo no mondai de,*
 question mistake TOP all national.language GEN problem COP:GRD
seitō ga sentakushi-chū ni nakattari, fukusū attari
 correct.answer NOM choice-among LOC exist:NEG:TARI several exist:TARI
shita.
 do:PAST
 ‘All of the mistakes in the questions were in Japanese language problems, where in some cases there was no correct answer among the choices, or there were multiple correct answers.’

In (41), the speaker describes a multiple-choice test that was poorly constructed, with several mistakes. For instance, in some questions, the correct answer was missing (all the options were incorrect), while in other questions, there were multiple correct answers.

Finally, we can likewise analyze the example provided by Alpatov (1997: 393) as an instance of distributive aspect:

- (42) *Soko ni wa mata danjo no komodo-tachi ga*
 There LOC TOP again male.and.female GEN child-PL NOM
nanninmo oyoidari moguttari shiteita.
 as.many.as.come swim:TARI dive:TARI do:STA:PAST
 ‘Again as many boys and girls were swimming and diving there.’ Alpatov (1997: 393)

The intended meaning of this sentence is that some boys and girls were diving, while some other boys and girls were swimming. This interpretation arises from the fact that the acts of swimming and diving need to be construed as ‘both real, but not jointly real’. It follows that the two actions need to be distributed across different groups of people. In this sense, *-tari* is not an aspectual marker, but a connective that stresses the independence of the mentioned events.

To conclude, we propose that the aspectual readings that have been reported for *-tari* do not result from any intrinsic aspectual value of the marker. On the contrary, as Narrog (2012) points out, *-tari* does not hold an inherent aspectual meaning, but simply refers to events in a general and undetermined manner. However, the separative conjunction reading may give rise to aspectual interpretations whenever the linked events are construed as realis occurrences situated on the temporal axis. In these cases, the need to stress the independence of the coordinands entails construing the events as alternating over time (i.e. iterative reading) or as distributed across different situations or sets of individuals (i.e. distributive reading). Crucially, this holds not only for *-tari*, but also for the other connectives that convey this separative conjunction reading, such as *ya* and *toka*.

6. Conclusions and future research

The goal of this paper was to examine the semantic relation encoded by Japanese non-exhaustive connectives *ya*, *-tari* and *toka*, focusing on their use in contexts that allow for potentially exhaustive interpretations.

After describing the connective system of Japanese and the pivotal role of the exhaustivity parameter, Section 2 illustrated how some Japanese non-exhaustive connectives can also occur in contexts that appear to be exhaustive. To address this issue, the paper argued that the behavior of these connectives is better explained not by mapping them onto Boolean logic operators (e.g., inclusive disjunction), but rather by adopting a usage-based perspective that focuses on the speaker’s intended meaning. Drawing from naturally occurring data, it was shown that these connectives can also encode a specific semantic relation referred to as *separative conjunction*, using the framework proposed by Ariel and Mauri (2018, 2019). According to this reading, these connectives indicate that each listed alternative is to be realized independently in separate situations, rather than co-occurring in the same context. Moreover, Section 5 further demonstrated how this separative conjunction reading can yield distributive or iterative interpretations, especially when the coordinated elements are anchored to the temporal axis as realis events. While such interpretations have traditionally been attributed to inherent aspectual properties, particularly in the case of the converb *-tari* (as discussed in Section 3), the present study argued that these aspectual interpretations are in fact derived from the semantic and pragmatic properties of the separative conjunction

reading itself. Since each coordinand is to be realized independently, their actualization entails multiple repeated occurrences (iterativity) or distinct participant sets (distributivity).

Ultimately, the analysis has shown that these Japanese connectives allow speakers to present multiple items or events while emphasizing their distinctness, thereby encoding a semantic relation that lies at the intersection between conjunction and disjunction.

Future research may start from this very point to further improve our understanding of coordination. For example, the fact that Japanese uses non-exhaustive connectives to convey a type of reading that is inherently exhaustive is striking. This raises the question of whether there is some connection between non-exhaustivity and the separative conjunction reading, possibly in the way the coordinands are construed as distinct from one another. In this regard, it is also worth noting that non-exhaustivity constitutes the main semantic feature underlying exemplification (Barotto 2021; Barotto and Mauri 2022). By their very nature, examples occur within a conceptual category, but at the same time, they are also construed as replaceable alternatives that the speaker can select from a paradigm. Thus, examples share a type of relation that crosses the boundaries between conjunction and disjunction, like the one theorized for the separative conjunction reading.

The most effective way to address these questions would be through a cross-linguistic investigation: a systematic examination of languages with non-exhaustive connectives could help determine whether an (exhaustive) separative conjunction reading is available for these connectives (or at least for some of them), or whether this phenomenon is instead a peculiarity of Japanese.

A further issue that should be considered in future research concerns the different distributional patterns of these connectives when they are used to express separative conjunction. In English, the separative conjunction reading can be conveyed by both *and* and *or*, although it is known that in certain contexts (e.g., under the scope of negation) one connective tends to be preferred over the other. The situation in English is quite peculiar because the connectives involved are dedicated conjunctive and disjunctive markers. Nevertheless, it is reasonable to ask whether Japanese non-exhaustive connectives are interchangeable (aside from their syntactic restrictions) when used to express the separative conjunction reading, or whether there are preferred contexts or even preferred connectives (for example, *toka* seems linked to a higher degree of vagueness than *ya*, which may make it more compatible with purely non-exhaustive contexts).

Finally, it would be interesting to determine whether all instances of the separative conjunction reading analyzed here constitute a homogeneous set, or whether an even more fine-grained distinction can be drawn. For example, following Ariel and Mauri (2018), occurrences could be further classified as cases of the separative conjunction reading *proper* or as cases whose interpretation is closer to a free-choice reading ('Free alternative' reading, in Ariel and Mauri's terms). The most appropriate method for addressing this question would likely involve developing specific paraphrasing tests for Japanese and administering them to native speakers through a questionnaire.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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